KIMAX 2

Kimax Onboard Weighing System

TAKE THE GUESSWORK OUT OF LOADING

www.kimax.com

Table of contents

In this folder you will learn the basics about your new Kimax system.

To have maximum benefit of your onboard weighing system, watch our videos and explanations on www.kimax.com/support

Onboard weighing (OBW)

The Kimax devices calculates the current axle loads based on measurements on either the pressure in the bellows for air suspension or the tension in the axles or the springs in suspension systems based on different versions of leaf springs or parabolic springs. Gross weight is calculated as a total of the single axle weights. The Kimax systems are available for most common versions of commercial vehicles.

The Kimax systems are non-verified tools, intended for assisting you in loading your truck/truck-trailer properly according to current load regulation. It is the truck owner/driver's responsibility to maintain a good calibration of his OBW system.

Warranty

Kimax 2 Radio is covered by Sense-Tech Weighing Systems ApS guarantee. Electronic failure and broken components caused by normal use are repaired or exchanged, when necessary, when sent to the factory.
Damage to your vehicle caused by installation of Kimax instruments or loss of time caused by recalibration or repairments of Kimax instruments are not covered by Sense-Tech Weighing Systems ApS in any case.

Basic safety rules

Before you start the installation procedure, make sure that the instruments have not suffered any damage during transport.

Note that the Kimax 2 instruments must be installed and connected in accordance with the regulations valid for the vehicle and the country in question.
The Kimax 2 instruments must be protected from gravel, water spray from wheels and other factors that may damage the instruments.
We recommend placing the instruments in a position where they are protected from water jets and rinse water.

Once you have decided where the instrument is to be **mounted in the cabin**, you must consider the cable routing.
Special attention should be given to potential damaging factors such as e.g. hinging point for tilting the cab.
Once you have decided where the instrument is to be **mounted on the chassis**, you must consider the cable routing. Special attention should be given to tensile forces, cuts and other factors that may damage the cables and hoses.

Daily use

Once the Kimax system is installed on your vehicle and the system is configured and calibrated you will be able to monitor several weights on the display. To get the best accuracy it is important that your vehicle is on a level surface with no brakes applied.
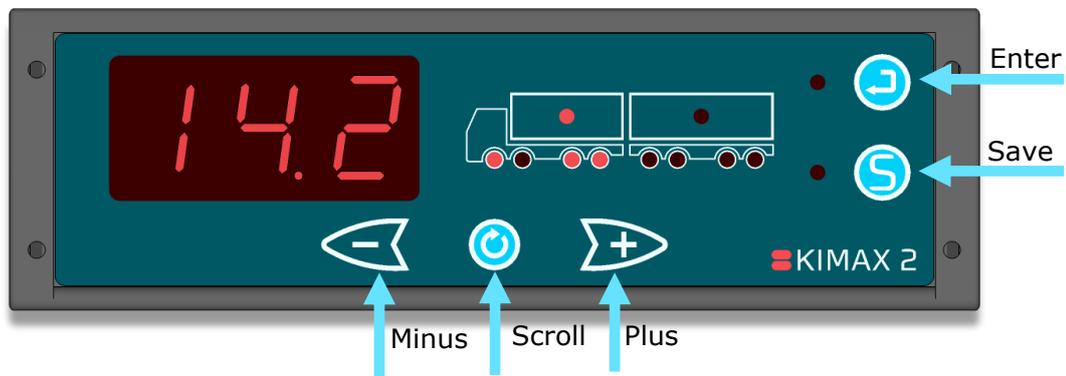

The device starts up showing you the **total weight**. Change the reading to display **single axle load** by pressing the Scroll button ⟳.
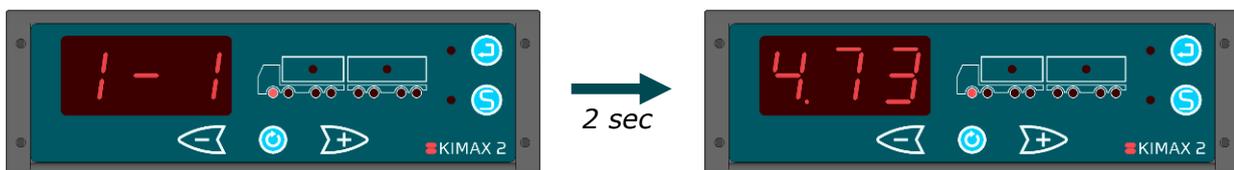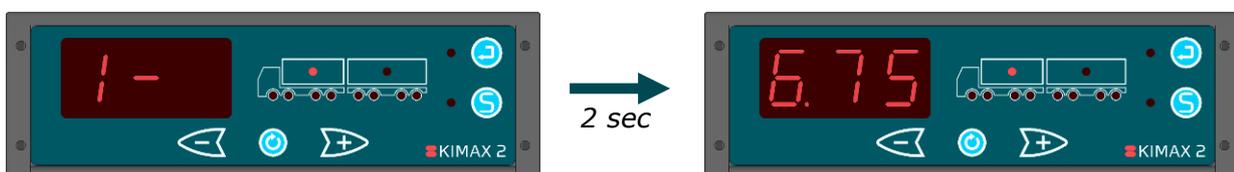

Indicates that the following value is coming from device 1, channel 1. After 2 seconds the reading changes to display the weight from that specific channel.

To display the **next axle load**, press the Plus button ⟩+ or press the Minus button –⟨ to display the **previous axle load**.
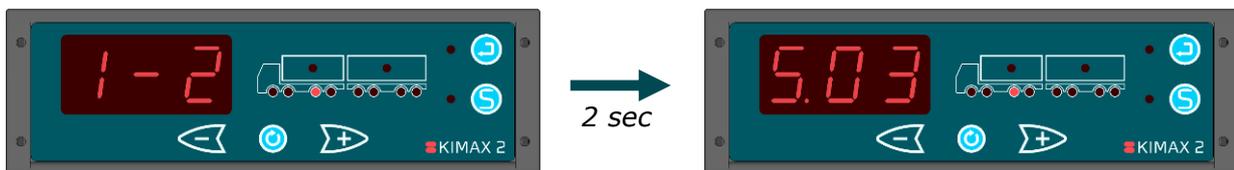
Indicates that the following value is coming from device 1, channel 2. After 2 seconds the reading changes to display the weight from that specific channel.

To display the **payload**, press the Scroll button ⟳.

Indicates that the following value is coming from device 1. After 2 seconds the reading changes to display that specific payload, the corresponding axle LED(s) will flash.

If one or more Kimax 2 devices are connected to your system, you may press the Plus button ⟩+ or press the Minus button –⟨ to display the **payload** of one of the connected Kimax 2 device(s). Press the Plus button ⟩+ or the Minus button –⟨ again to view the **payload** for the next Kimax 2 device.

Indicates that the following value is coming from device 4. After 2 seconds the reading changes to display that specific payload, the corresponding axle LED(s) will flash.
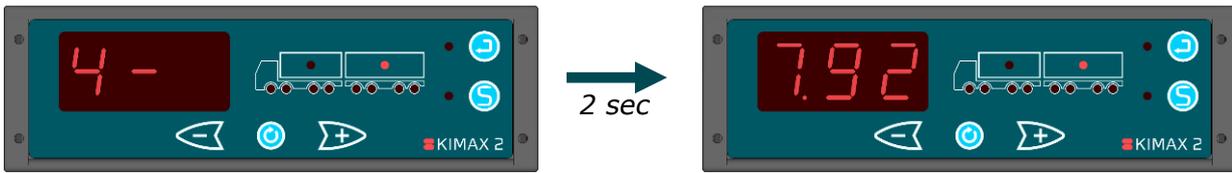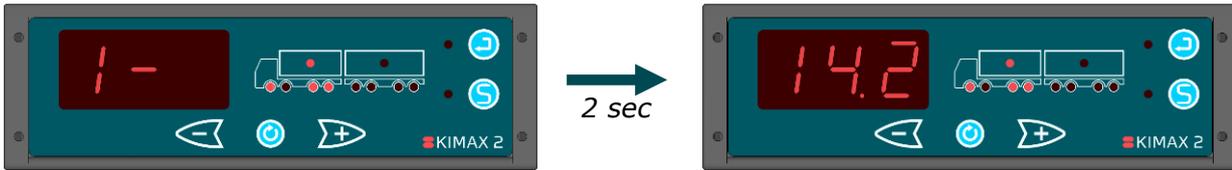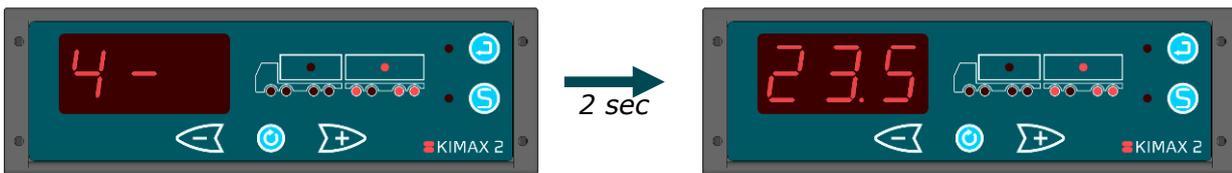
To display the **total load** of the truck, press the Scroll button ⊙.

Indicates that the following value is coming from device 1. After 2 seconds the reading changes to display that specific total weight.

If one or more Kimax 2 devices are connected to your system, you may press the Plus button ⊳+ or press the Minus button ⊲− to display the **total weight** of one of the connected Kimax 2 devices. Press the Plus button ⊳+ or the Minus button ⊲− again to view the **total weight** for the next Kimax 2 device.

Indicates that the following value is coming from device 4. After 2 seconds the reading changes to display that specific total weight.

Press the Scroll button ⊙ to display the **total payload** of your setup.
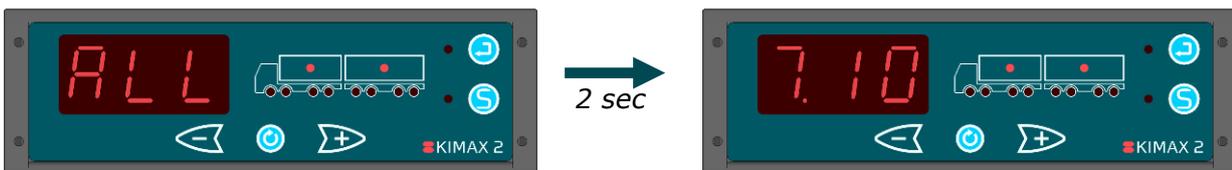
Indicates that the following value is the total payload of your setup, the corresponding axle LEDs will flash.

Press the Scroll button ⊙ again to display the **total weight** of your setup (this is what your Kimax 2 radio normally starts up displaying).
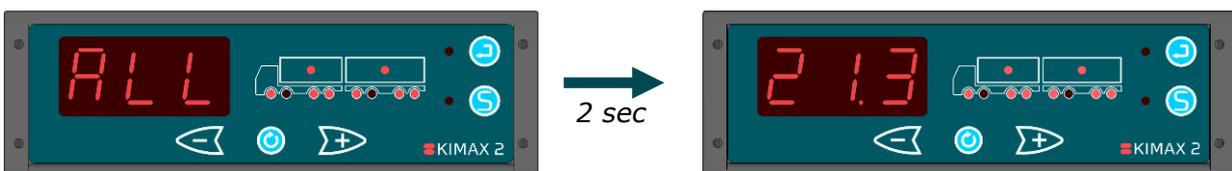
Indicates that the following value is the total weight of your setup.

Please visit www.kimax.com/support-3/#accordion-truck-semitrailer-1
for a video walk through

Tare

The tare function is designed to be used when loading an **empty** vehicle.

When the tare function is activated, the payload is set to 0.00 ton and the individual axles are set to their respective LO values (empty weights).

If a load is already on the vehicle, this load will be neutralized and therefore not represented in the load values. It is however possible to monitor what you unload by changing the readout to your payload.

To start the tare function, press the Save button 🅢, when the device is showing the **total weight** of the vehicle. The LED next to 🅢 will be illuminated and the display will show the **empty weight** of the vehicle.

Pressing the Scroll button 🔄 will change the read out to **single axle load** value. Press the Minus button ◀ or the Plus button ▶+ to change the read out between the active channels.

Press the Scroll button 🔄 again to display the **payload** of the vehicle. If more than one Kimax unit is present in your setup you may change the read out by pressing the Minus button ◀ or the Plus button ▶+ to change the read out between the different Kimax units.

Press the Scroll button 🔄 again to display the **total weight** of the vehicle. From here you can exit the tare mode.

When 🔄 is pressed in total weight reading, you will get a **printout** of all the data if you have a printer connected.

When the read out is not the total weight, you can **pause the calculation of weight** by pressing to enter button 🔄 the associated LED will start to flash and now you may move the vehicle to a new loading position. When the vehicle has reached its position for further loading, press the enter button 🔄 again. The associated LED will stop flashing and the calculation of the weight will be resumed. This procedure can be done repeatedly.

The LED next to the Save button 🔄 will be lit to indicate that the value is a tare value.

If you want a printout of your tare weight you may press the Enter button 🔄 when the read out is showing the **total weight.**

To leave the tare function when the loading is done. Make sure the display is showing the **total weight** of the vehicle and press the Save button 🅢. The LED associated to 🅢 will turn off.

Electrical connection

Always disconnect the master switch before you perform any installation work on the system of the vehicle.

Do not route the cables next to ignition cables or other cables carrying large currents.

Make sure that the cables are not exposed to tensile or shearing forces. Protect the cables with rubber grommets if you route the cables through holes.

For connecting cables use crimp connectors or another approved method. Avoid short-circuiting the system by faulty connections or squeezed cables.

Fasten the cables at suitable intervals.

Basic installation

When you use your Kimax 2 Radio instrument on a **single** vehicle, you only need to connect the brown wire from pin 1 in the cable set to the chassis (- supply) and the black wire from pin 2 to +24 V through a switch (ignition) and a fuse and you are done.

Unused wires in the cable set are kept insulated from the chassis and any other conductive circuits.
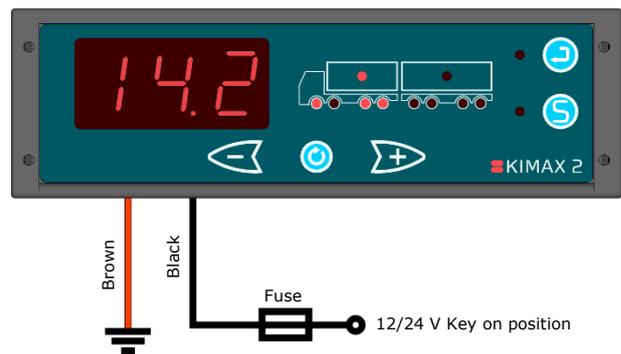
Extended installation

When you use your Kimax 2 Radio on a truck and trailer configuration, you must connect the communication wires as shown on the following page.

A Kimax 2 Sensor is needed together with a Kimax Radio or Universal when you have a truck and trailer configuration.

The unit comes with a 5 wire cable. For more information check www.kimax.com

On the next page will be a schematic on how to install the Kimax devices.
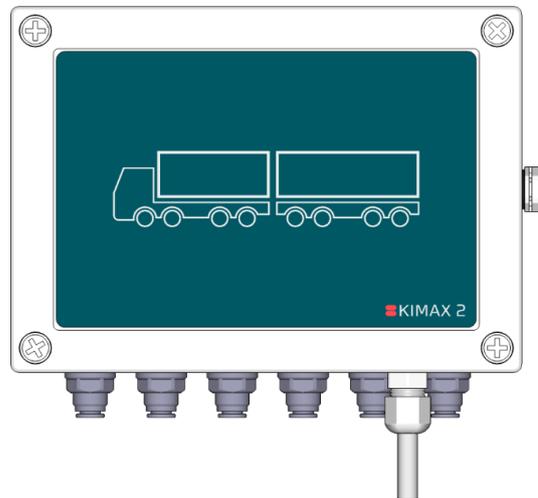
For more details please visit
www.kimax.com/support-3/#accordion-user-manual-electrical-installation-2

Truck

Device 1
Radio with sensors

12/24V Key-on position

Green 3
White 4
Brown 1
Black 2

Black

Fuse

KIMAX 2

(Green)
(White) **

Truck with
light unit
placed in chassis

Electric center

Cabin
Chassis

Direction indicator RHS
Direction indicator LHS

CAN-L
CAN-H

Light unit
for trailer

3)

Truck with
light unit as part
of electric center

Electric center

Direction indicator RHS
Direction indicator LHS

Cabin
Chassis

2)

(Green)
(White)

1)

Draw 2-wire cable with
any colour wires.

		Grnd	LHS	RHS	Mark
24V-7 pin	1	3	5	2/6
24V-13 pin	4	1	2	5/6
24V-15 pin	4	1	2	5/6

Note:
This shows 7-pin connector for 24V
systems. Connector can be 13-pin or 15
pin. Scheme below show pin number.
Allways check with wiring diagram for
specific vehicle or check with test lamp.

Options for connecting green and white wires **:
1) Can be used for all trucks
2) Can be used if wires are available in cabine. This can
be the most simple way to connect wires.
3) Can be used for truck with light unit placed in chassis.

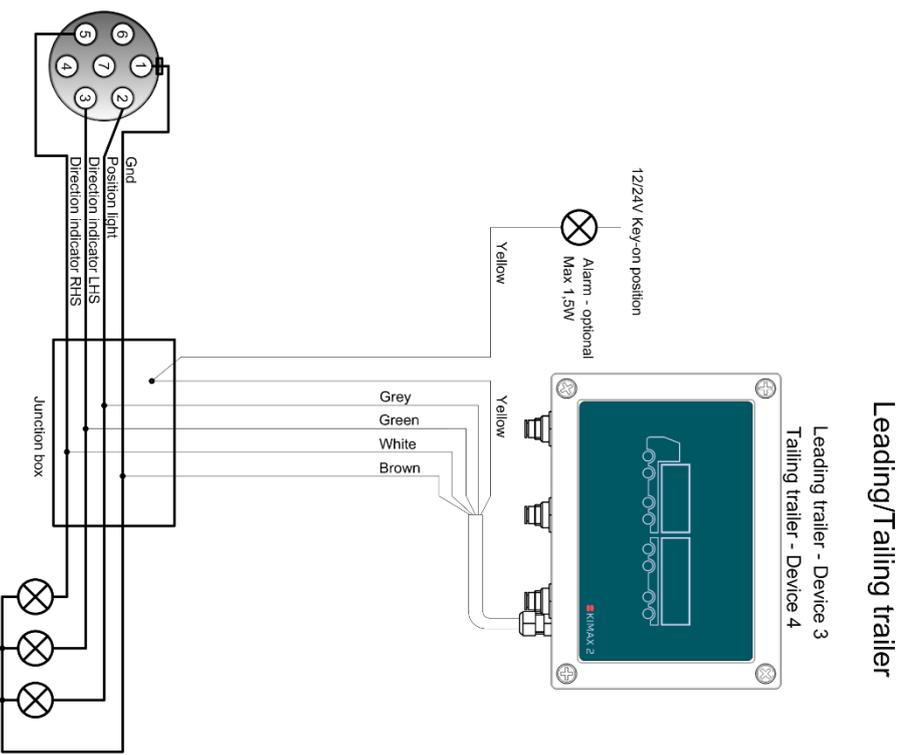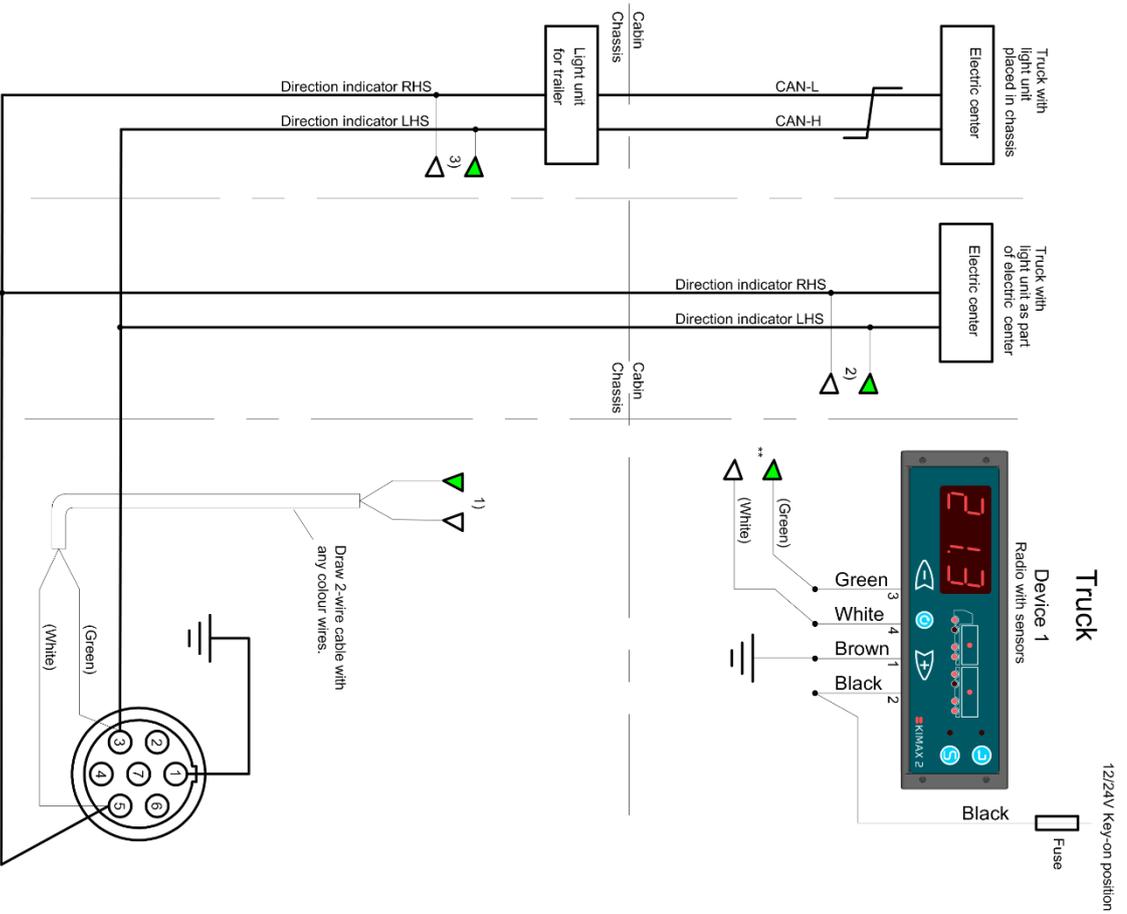| Dato of change:		Latest change:		Changed by:		Document name (pdf):	Rev.no:
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Date of creation:	Subject:			Material:	Dimension:
3. August 2020	Wir dgm Truck Device 1 and trailer Device 3+4			-	-

Created by:	Part no:		
Magnus From	-		

Date of approval:
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Approved by:
Erik Kjærgaard

Sense-Tech
Weighing Systems ApS
Bygade 43 A - DK 7173 Vonge
Tel. +45 76703001 - Fax +45 76703002
mail@sense-tech.com - www.sense-tech.com

Scale:	Tolerance:
-	-

Page x of x:
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IMPORTANT:
Kimax device on trailer needs 12V/24V from trailer. In above application Kimax device
will only function when day running light or position light is switched on.

Leading/Tailing trailer

Leading trailer - Device 3
Tailing trailer - Device 4

12/24V Key-on position

Alarm - optional
Max 1.5W

Yellow

Yellow

Grey
Green
White
Brown

KIMAX 2

Gnd
Position light
Direction indicator LHS
Direction indicator RHS

Junction box

Serial outputs and input

The Kimax 2 radio has two RS-232 serial data outputs which can be used for a tracker/onboard computer and a printer. The data for the tracker/onboard computer will be available on pin number 7 and the baud rate is 9600.

The get more information on the protocol for the tracker/onboard computer please visit our homepage.

www.kimax.com/support-3/#accordion-user-manual-electrical-installation-1

Printer connection

A RS-232 printer (P/N 10120) can be connected to the Kimax 2 radio. The data will be available on pin number 6. The baud rate for the printer is 4800.

The get more information on the protocol for the tracker or the onboard computer please visit our homepage.


```
        KIMAX 2

Date:          _____

Time:          _____

Company:       _____

Car ident No:    _____

ID No:   001

Truck:
   Axle    #1:        06.14 Ton
   Axle    #2:        05.40 Ton
   Axle    #3:        08.90 Ton
   Axle    #4:        08.34 Ton
   Load  :            16.42 Ton
   Total :            28.78 Ton

Trailer:
   Axle    #5:        06.40 Ton
   Axle    #6:        06.89 Ton
   Load  :            08.79 Ton
   Total :            13.29 Ton

Truck+Trailer:
   Load  :            25.21 Ton
   Total :            42.07 Ton
```


www.kimax.com/support-3/#accordion-user-manual-electrical-installation-1

Wireless data transmission
If your Kimax 2 radio has a built-in FM-transmitter you will be able to read the different weights on a wireless receiver (P/N 060000-0105).

The get more information on the wireless receiver please visit our homepage.

www.kimax.com/support-3/#accordion-user-manual-wireless-1

CAN input or output
If your Kimax 2 radio has a CAN bus connection, you will be able to read the different weights on the display or the Kimax 2 radio will have the possibility to transmit its measured weights to a tracker or onboard computer.

Values transmitted from the Kimax 2 radio has these settings:
Identifier: 0x18FEEA61
Transmission interval: 250 ms
Bit rate: 250 Kbit

Sensor installation
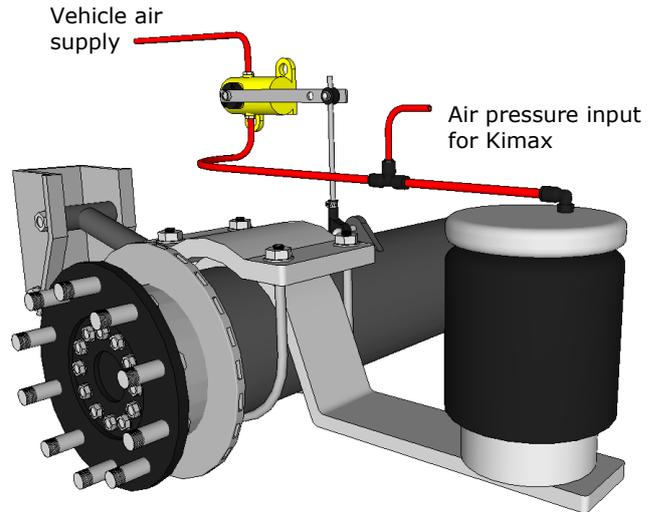
Air sensor installation

Before you carry out any installation work related to the air suspension, make sure that the suspension has been brought to the lowest possible position.

Cut the air hose close to the air bag add a T-piece and route a new hose to the Kimax device.

For more information visit

www.kimax.com/support-3/#accordion-user-sensor-installation-1

Vehicle air supply

Air pressure input for Kimax

SG sensor installation

An SG sensor is intended for use on a spring suspended axle.
For information on installing an SG sensor visit

www.kimax.com/support-3/#accordion-user-sensor-installation-3

Calibration

You must calibrate your Kimax system to read the different weights on the display. Have a look at our videos on https://www.kimax.com/menu-full
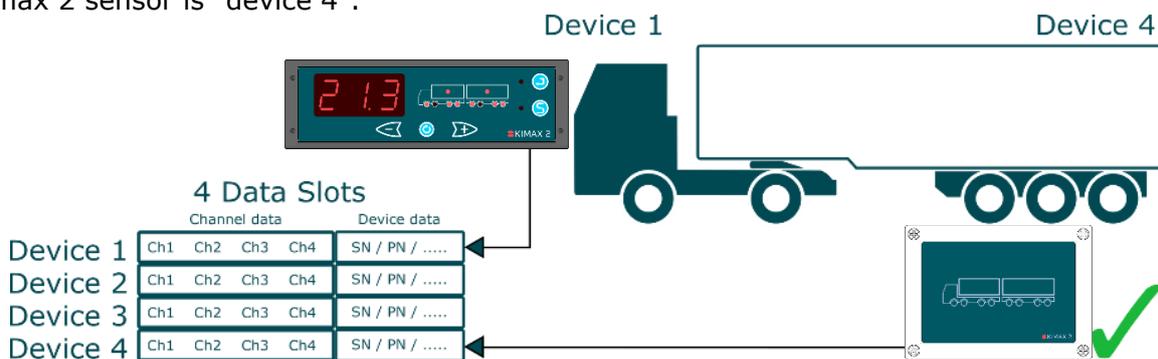
Alarms

One or more alarm output(s) is/are available on a Kimax 2 Radio. An alarm may be used to alert the driver that the truck is loaded to its maximum. For more information visit https://www.kimax.com/menu-full/#accordion-menu-14

Configuration

The Kimax system is a modular system that can be configured to fit a wide range of different vehicle configurations.

The Standard configuration for a Kimax 2 radio is "device 1" and the standard configuration for a Kimax 2 sensor is "device 4".

Device 1

Device 4

4 Data Slots

	Channel data				Device data
Device 1	Ch1	Ch2	Ch3	Ch4	SN / PN / .....
Device 2	Ch1	Ch2	Ch3	Ch4	SN / PN / .....
Device 3	Ch1	Ch2	Ch3	Ch4	SN / PN / .....
Device 4	Ch1	Ch2	Ch3	Ch4	SN / PN / .....

Learn more about the Kimax system and the configuration on our webpage www.kimax.com

Technical specification Kimax 2 Radio:

Supply voltage	10 ... 30 Volt direct current	Operating pressure	Range 0 to 10.5 bar
Current consumption	Max. 90 mA	SG Sensor	0-20 mA input
Alarm 1	Flashing display	Printer	RS-232 serial
Alarm 2	Output open collector NPN max. 0.2 A/ 50 VDC	On-Board Computer	RS-232 serial
Display	Three-digits 7-segment LED, character height 20.3 mm	Device bus	Power line communication
Measuring accuracy	±2 % of maximum load at 0 °C ... +50 °C	Operating temperature	-25 °C ... +70 °C
Air connection	Push-in release connection, 6 mm hose	Storage temperature	-40 °C ... +70 °C
Maximum pressure	15.5 bar (225 psi)	Dimensions (DIN format)	182 x 53 x 75 mm
Operating pressure	Range 0 to 10.5 bar (0 to 150 psi)	Weight	Approx. 550 g
		Approval	CE and E1

The policy of Sense-Tech Weighing Systems ApS is to continually improve our products. This means that product specifications may change without prior notice.

Declaration of Conformity ⟨ CE ⟩

Kimax 2

We declare under Sole responsibility that the product described under technical specification is in conformity with the following standards or standardization documents:
ECE R10, item 6.5 – 6.6 - 6.7 - 6.8 – 6.9

Technical file at Sense-Tech Weighing Systems ApS, DK-7173 Vonge

Erik Kjærgaard

Erik Kjærgaard
Director
Vonge 29th May 2018

SENSE-TECH
Weighing Systems

English
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